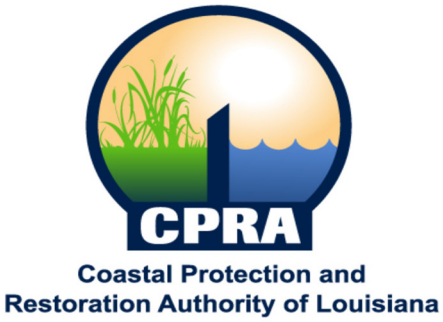


Coastal Protection and Restoration Authority of Louisiana

Office of Coastal Protection and Restoration

2013 Annual Inspection Report

Fritchie Marsh Restoration

State Project Number PO-06
Priority Project List 2

May 15, 2013
St. Tammany Parish

Prepared by:

Kyle Breaux E.I.
CPRA
New Orleans Field Office
CERM, Suite 309
2045 Lakeshore Dr.
New Orleans, La 70122

Table of Contents

Appendices

I. Introduction

The Fritchie Marsh Restoration Project (PO-06) project area contains intermediate and brackish marsh, and is located southeast of Slidell in St. Tammany Parish (Appendix A). The area is bound by US Hwy 190 to the north, US Hwy 90 to the south and east, and LA Hwy 433 to the west and south.

II. Project Description and History

From 1956 to 1984, 2,260-ac (915-ha) of emergent marsh within the Fritchie Marsh project area have been converted to open water, with the greatest loss occurring in the northern project area. This loss reflects a pattern of marsh deterioration from north to south due to a reduction of freshwater and sediment input into the northern part of the project area. Natural hydrologic patterns have been disrupted by the construction of the perimeter highways. These embankments isolate the marsh from the West Pearl River, and have restricted inflow of freshwater, nutrients, and sediment. Additionally, saltwater from Lake Pontchartrain enters the marsh through the W-14 canal and Little Lagoon during high tides and strong winds. As a result, the project area has converted from a predominantly fresh marsh in 1956 to a predominantly brackish marsh in 1990.

The objective of the Fritchie Marsh Restoration Project is to reduce marsh loss by restoring more natural hydrologic conditions in the project area through management of available freshwater. Specific objectives are (1) to increase freshwater flow and promote water exchange into the area from West Pearl River by enlarging the culvert at U.S. Highway 90 and by dredging portions of Salt Bayou and (2) increase freshwater flow into the northern project area by diverting flow from the W-14 canal.

The Fritchie Marsh Restoration Project was constructed in one phase beginning in October 2000 and completed in March 2001. The project has a 20-year economic life which began in March 2001.

The principal project features include:

- A 72-inch diameter by 136-foot long concrete culvert under U.S. Highway 90, rock riprap lining of the Salt Bayou channel bottom and pipe outlets, and installation of 308 linear feet of sheet piling to form a bulkhead.
- Dredging of approximately 5300 linear feet of Salt Bayou.
- Installation of a weir in the W-14 canal. The weir consists of 108 linear feet of sheet pile with a 20-foot wide boat bay.
- Dredging approximately 400 linear feet of the W-14 diversion channel.

In August 2005 Hurricane Katrina passed directly over the Fritchie Marsh Project area. The forces created by this storm caused significant damage to the marsh but not to any of the project features. Large areas of marsh were converted to open water, whereas sections of sheared marsh were deposited into the natural bayous and canals creating a number of

blockages. Existing breaches on the banks of Salt Bayou were enlarged and new breaches were created, which are diverting water away from the natural conveyance channels. The previously established hydrology within the project area has been significantly altered.

III. Inspection Purpose and Procedures

The purpose of the annual inspection of the Fritchie Marsh Restoration Project (PO-06) is to evaluate the constructed project features to identify any deficiencies and prepare a report detailing the condition of project features and recommended corrective actions needed. Should it be determined that corrective actions are needed, OCPR shall provide, in the report, a detailed cost estimate for engineering, design, supervision, inspection, and construction contingencies, and an assessment of the urgency of such repairs (O&M Plan July 10, 2002). The annual inspection report also contains a summary of maintenance projects and an estimated projected budget for the upcoming three (3) years for operation, maintenance and rehabilitation. The three (3) year projected operation and maintenance budget is shown in Appendix C. A summary of past operation and maintenance projects completed since completion of the project are outlined in Section II.

An inspection of the Fritchie Marsh Restoration Project (PO-06) was held on May 15, 2013, by Kyle Breaux (CPRA), Steven Armstrong (CPRA), Warren Blanchard(NRCS), and Brandon Samson(NRCS). Access through Salt Bayou was possible for not available due to siltation.

IV. Inspection Results

Hwy 90 Culvert and Stone Revetment

There is no change in this structure from the previous inspection. The bank scour reported in previous inspection reports is still of concern.

Salt Bayou Dredging

Salt Bayou was accessible until approximately 1.3 miles from the Hwy 90 culverts. The bayou had silted in between this point and the end of the project dredging. Flow through the culverts seeps through breaks in the marsh banks. There are trees and tree limbs in the bayou approximately 200 feet from the culvert outlet.

W-14 Weir

There was no visible damage to this structure or the signs. It is operating as designed.

W-14 Diversion Channel Dredging

There is no visible change to this feature. Water is flowing through as designed.

V. Conclusions

The project features for the Fritchie Marsh Restoration Project are performing as designed. Insufficient maintenance funds prevent re-dredging of the bayou. If the project team deemed it appropriate, discussion of a channel survey could be observed to verify existing conditions.

The main goal of the project is to divert and retain fresh water into the project area. Previous reports discussed an evaluation of Salt Bayou's effectiveness to deliver water to the project area. However, after reviewing the goals of the project it was determined that this was not necessary. While a good portion of Salt Bayou has silted in, there is a stretch entering the project area from the culverts that remains deep. This allows fresh water to enter the project area, at which point the silted in bayou forces water to divert into adjacent marsh through the breaches in the bank fulfilling the referenced project goal.

VI. Recommendations

Continue to inspect the project features for functionality. The project budget calls for sign replacement at Year 14 or 2016. The project team will determine the necessity of such replacement.

Immediate Repairs

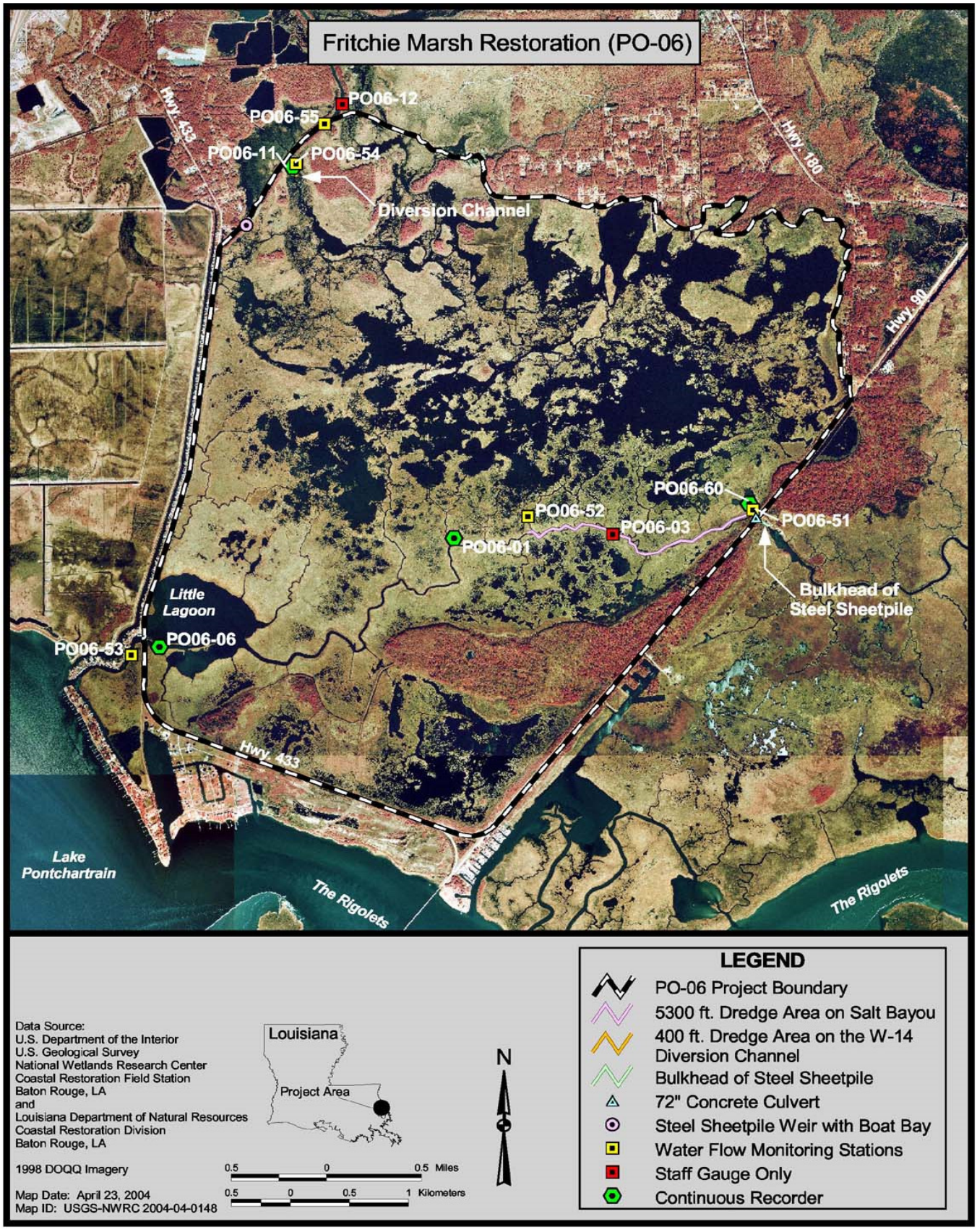
- None at this time.

Programmed Maintenance

- None at this time.

Appendix A

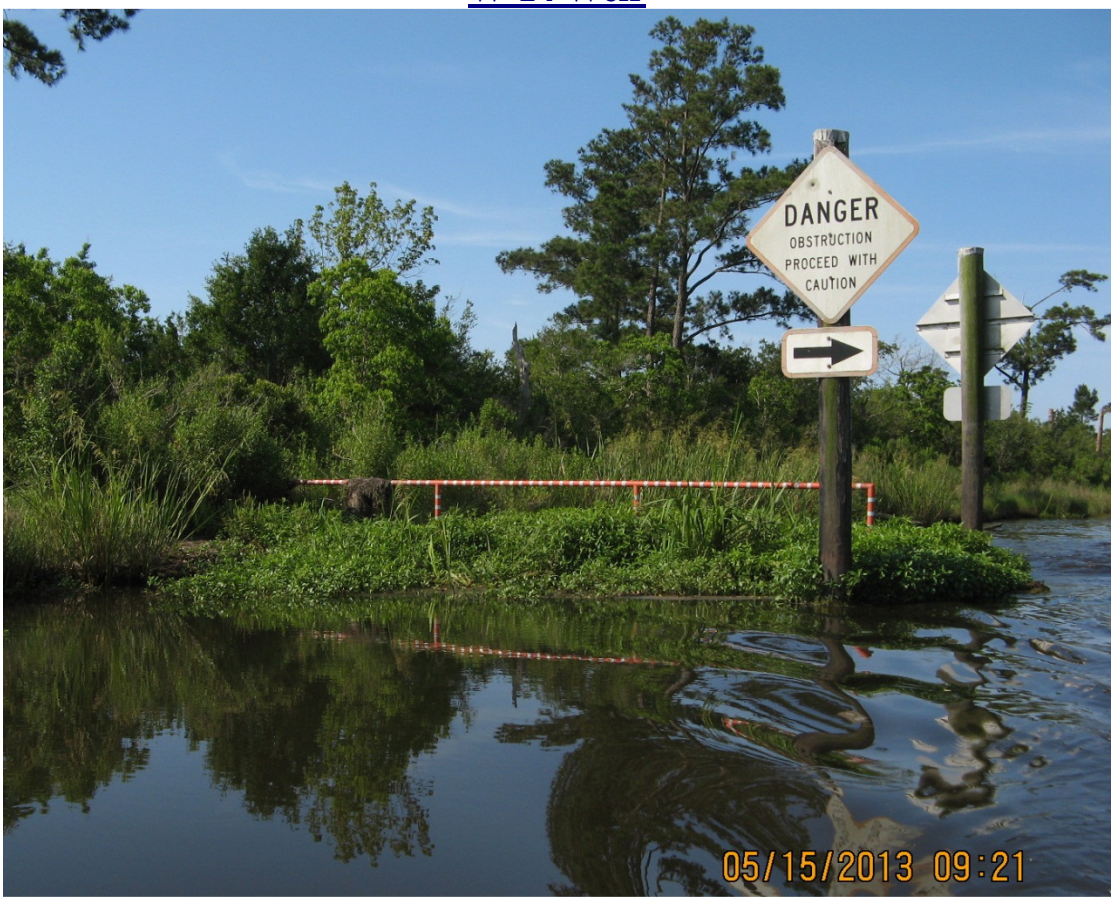
Project Features Map


Fritchie Marsh Restoration (PO-06)
PO06-12
PO06-55
PO06-11
PO06-54
Diversion Channel
Hwy. 433
Hwy. 180
Hwy. 90
PO06-60
PO06-52
PO06-03
PO06-51
PO06-01
Bulkhead of Steel Sheetpile
Little Lagoon
PO06-06
PO06-53
Hwy. 433
Lake Pontchartrain
The Rigolets
The Rigolets
LEGEND
PO-06 Project Boundary
5300 ft. Dredge Area on Salt Bayou
400 ft. Dredge Area on the W-14 Diversion Channel
Bulkhead of Steel Sheetpile
72" Concrete Culvert
Steel Sheetpile Weir with Boat Bay
Water Flow Monitoring Stations
Staff Gauge Only
Continuous Recorder
Data Source:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Baton Rouge, LA
and
Louisiana Department of Natural Resources
Coastal Restoration Division
Baton Rouge, LA
1998 DOQQ Imagery
Map Date: April 23, 2004
Map ID: USGS-NWRC 2004-04-0148
Louisiana
Project Area
N
0.5 0 0.5 Miles
0.5 0 0.5 1 Kilometers

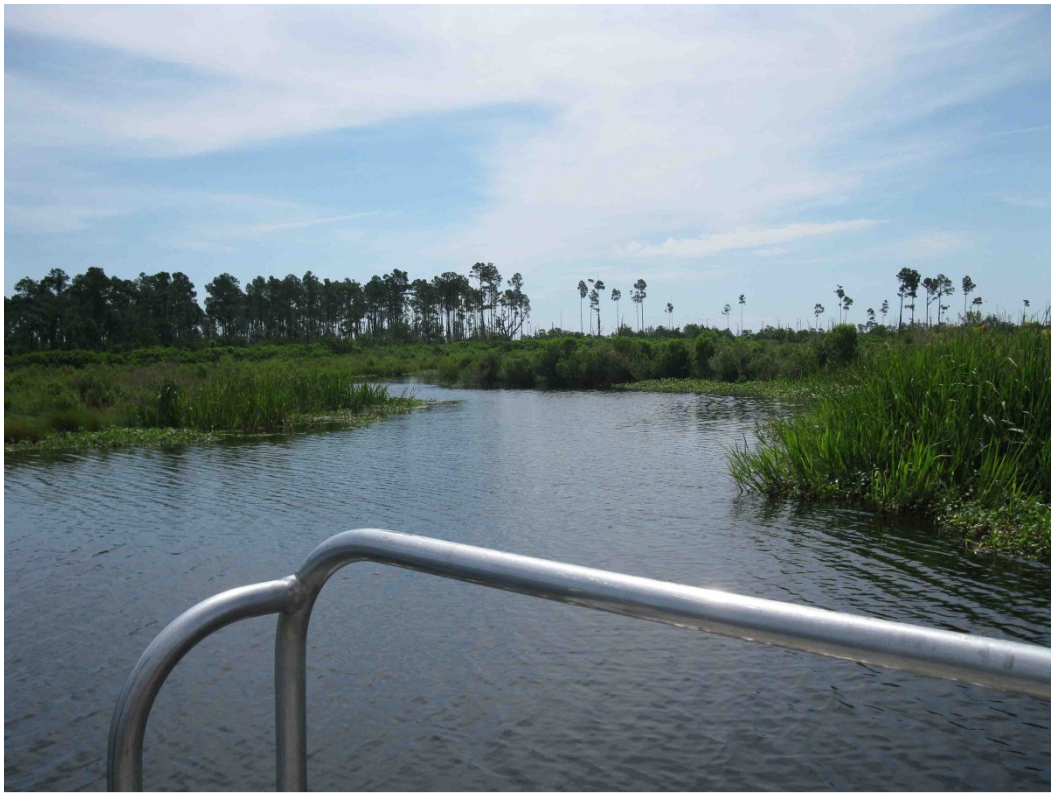
Appendix B

Photographs

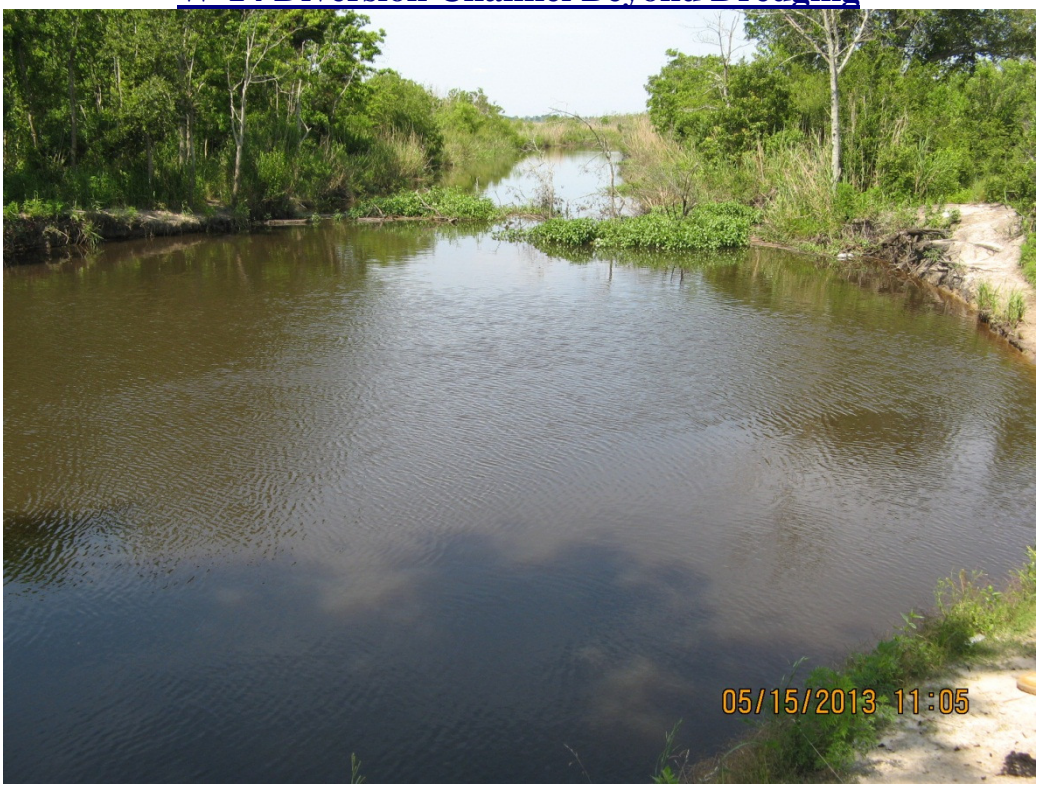
W-14 Weir



W-14 Weir

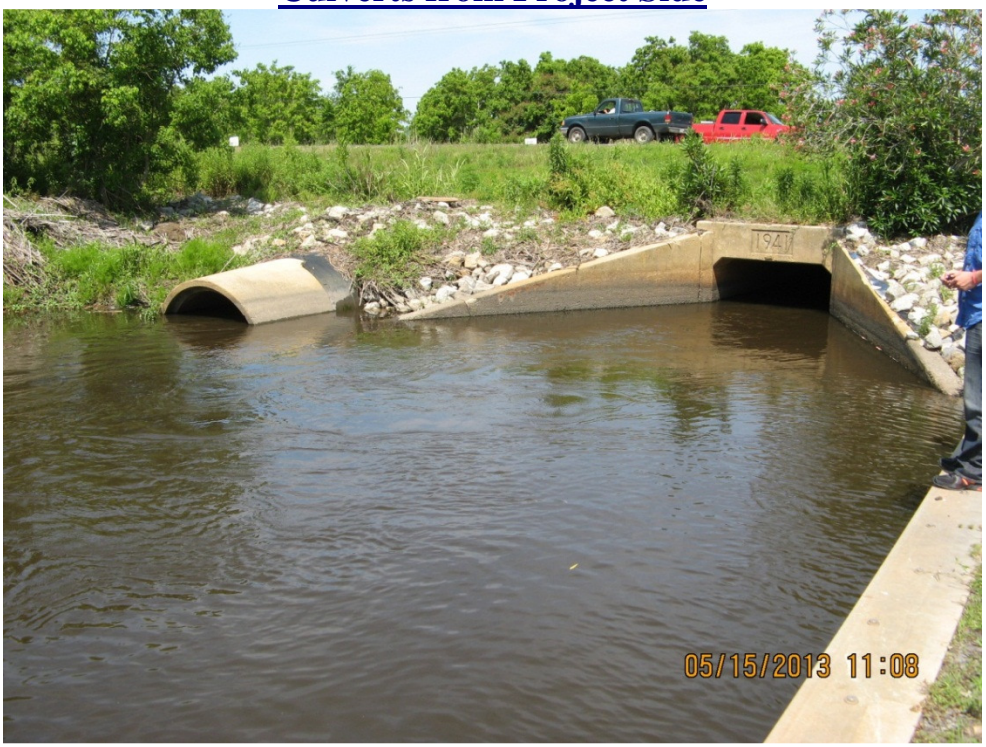


W-14 Diversion Channel Beyond Dredging

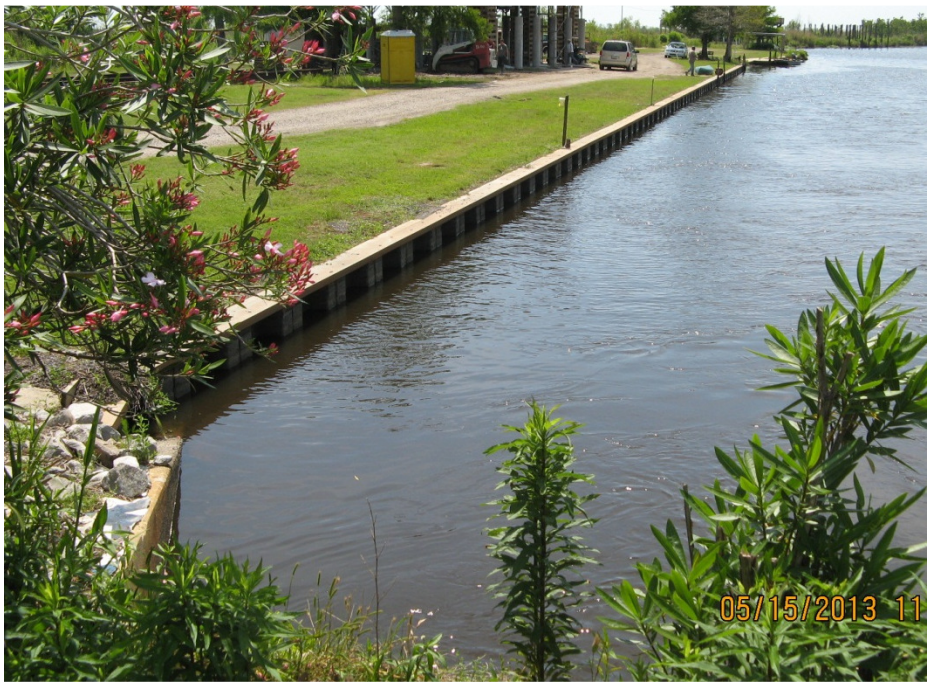


Salt Bayou Bank Near Culverts

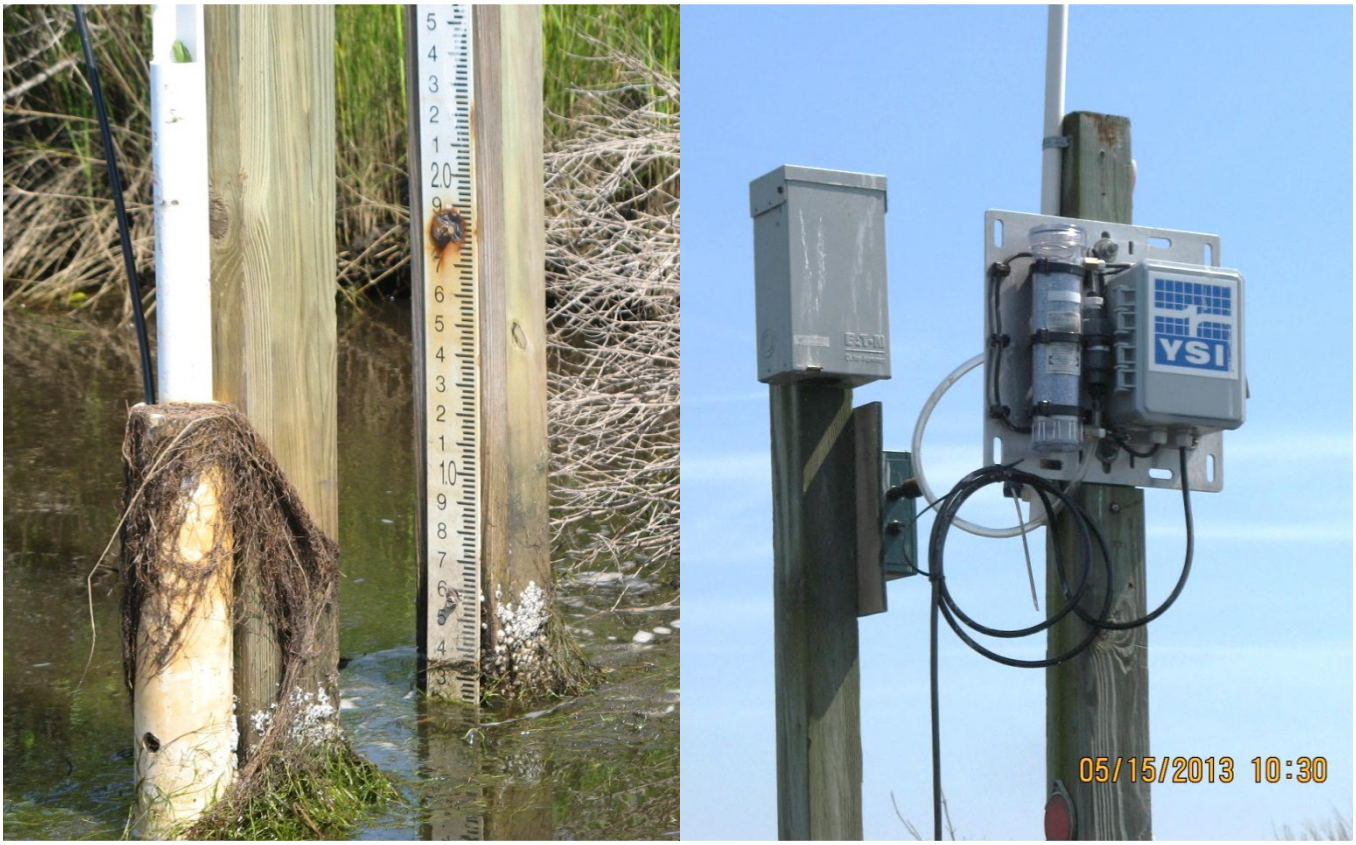
Culverts from Project Side



Culverts from East side of Hwy 90



Bulkhead from East side of Hwy 90



Continuous Recorder in Salt Bayou

Appendix C

Three Year Budget Projection

2013 Annual Inspection Report
Fritchie Marsh Restoration
State Project No. PO-06

Fritchie Marsh Hydrologic Restoration (PO-06)																					
Federal Sponsor: NRCS																					
Construction Completed : March 6, 2001																					
PPL 2																					
Current Approved O&M Budget	Year 0	Year - 1	Year -2	Year -3	Year -4	Year -5	Year -6	Year -7	Year -8	Year -9	Year -10	Year -11	Year -12	Year -13	Year -14	Year -15	Year -16	Year - 17	Year -18	Year -19	Project Life	Currently
June 2009	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	Budget	Funded
State O&M																					$225,211	$225,211
Corps Admin																					$0	$0
Federal S&A																					$0	$0
Total																					$225,211	$225,211
																					Remaining	Current 3 year
Projected O&M Expenditures																					Project Life	Request
Maintenance Inspection											$3,796	$3,895	$3,996	$4,100	$4,206	$4,316	$4,428	$4,543	$4,661	$4,782	$35,033	$12,302
General Maintenance																					$0	$0
Surveys																					$0	$0
Sign Replacement															$14,000						$14,000	$0
Federal S&A																					$0	$0
Maintenance/Rehabilitation																					$0	$0
E&D																					$0	$0
Construction																					$0	$0
Construction Oversight																					$0	$0
Total					$0	$0	$0	$0	$0	$0	$3,796	$3,895	$3,996	$4,100	$18,206	$4,316	$4,428	$4,543	$4,661	$4,782	$49,033	$12,302
O&M Expenditures from COE Report				$129,302				Current O&M Budget less COE Admin					$225,211				Current Project Life Budget less COE Admin					$225,211
State O&M Expenditures not submitted for in-kind credit				$0				Remaining Available O&M Budget					$95,909				Total Projected Project Life Budget					$178,335
Federal Sponsor MIPRs (if applicable)				$0				**Incremental Funding Request Amount FY12-FY14**					**-$83,607**				**Project Life Budget Request Amount**					**-$46,876**
Total Estimated O&M Expenditures (as of April 2010)				$129,302																		

Appendix D

Field Inspection Form

2013 Annual Inspection Report
Fritchie Marsh Restoration
State Project No. PO-06

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: **PO-06 Fritchie Marsh**

Date of Inspection: 5/15/13 Time: 9:00am

Structure No. n/a

Inspector(s): Breaux, Armstrong, Blanchard, Samson

Structure Description: **HWY 90 Culvert & Salt Bayou Bulkhead**

Water Level Inside: 0.2 Outside: N/A

Type of Inspection: Annual

Weather Conditions: Warm, Clear

Item	Condition	Pysical Damage	Corrosion	Observations and Remarks
Steel Bulkhead / Caps	Good	None	None	Good
Handrails, Grating, Hardware, etc.	Good	None	None	Vegetation and debris surrounding railings. Overall condition is good.
Signage, Supports	Good	None	None	Clear and legible. Reflective tape fading
Rock RipRap channel lining	Good	None	None	
W-14 Weir structure	Good	None	None	Submerged. Water flowing
W-14 diversion channel dredge	Good	n/a	n/a	Debris at inlet of channel
Salt Bayou dredging	n/a	n/a	n/a	Inspection halted approximately 1.3 miles from Hwy 0 to due shallow water levels in Salt Bayou. Branches and fallen debris in channel at culvert outlet
72" Diameter culvert	Good	None	None	Functioning properly. No undermining of the structure observed.
HWY 90 road surface	Good	None	None	Asphalt layer appears to have been ground down recently. Cracks exist.